

## Bioviolence: preventing biological terror and crime

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The potential of biological weaponry to inflict mass casualties and social disruption has received considerable international attention since the 1930s. Over the past 10 years the threat posed by terrorists using these weapons has loomed large, while concerns about the use of biological warfare by states have not entirely disappeared. Drawing on his extensive background in the areas of international law and arms control, Barry Kellman presents the case for a global approach to preventing biological terror and crime – "bioviolence" – whether initiated by terrorists or governments.

Part I of the book (which consists of three chapters) briefly frames the threat posed by bioviolence, outlining the potential societal impacts, as well as the methods adopted and the motivation behind its use. Potential societal impacts of bioviolence vary enormously, with rapidly evolving technological advances in molecular biology, nanotechnology and other fields making it possible to produce more effective and lethal bioweapons, as well as adding increasing complexity to their possible deployment scenarios. Historically, governments have been the prime players in the bioweapons arena but, more recently, terrorists and criminals have also shown interest in using them to further their goals. One chapter presents a brief summary of national bioweapons programmes, past and allegedly current, together with those of recognized terrorist organizations, with a focus on Al Qaeda. Although such terrorist groups have had limited success in procuring or developing bioweapons, the threat that they pose to global peace must be taken seriously.

Part II (which consists of six chapters) focuses on the current means and strategies to control bioviolence and proposes a global strategy for preventing it. Kellman emphasizes that no control programme can guarantee that a bioattack will not occur, and that resources are not limitless and must be wisely spent. He balances this, however, by urging that more can and should be done. Public health preparedness against bioviolence is needed globally, not just in industrialized countries. In this respect, further national and international policies and laws against the development and use of bioweapons are required. However, a uniform approach to developing such policies and laws is complicated by competing interests; and there are major differences of opinion as to what should be considered a bioweapons development programme and even whether or not certain applications of microbial agents amount to biological warfare. Kellman raises a few questions. For example: should any restrictions be placed on scientific research or publication of scientific studies that might have application in developing bioweapons? Who should be in charge of a global strategy to control bioweapons and how should the mission be accomplished? He tackles these issues and reaches the conclusion that three new United Nations bodies are needed to deal with them; other agencies, in particular Interpol, could also assist in this respect.

The book, while admirably written, would have benefited from some fact checking. For example, George W Merck was not, as claimed, the Secretary of War in the United States of America (USA) during the Second World War; this role was performed by Henry Stimson, who is named incorrectly as the Secretary of State. The USA did not use haemorrhagic fever viruses as weapons, and some of the cited agents, e.g. the Ebola viruses and hantaviruses, were first propagated well after the USA's offensive bioweapons programme had been discontinued. Also, in contrast to what the book states, a smallpox patient walking through an airport terminal would present a low risk of disease transmission: high risk of smallpox transmission is associated with sustained close exposure such as that from household contacts. Similarly, person-to-person transmission of the haemorrhagic fevers is by direct contact and not via infectious aerosols, making the claimed scenario of contagion resulting from a patient walking through a crowded area implausible. Furthermore, although molecular biology can enhance the hazards posed by bioweapons, the reader must remember that such weapons were initially developed using relatively primitive technology that still remains readily available today.

This book can be recommended to readers who are interested in the development of arms control policy and public health prevention of bioviolence. Kellman's suggested approach is thoughtful and ambitious; however, a question remains about its effectiveness. The asymmetric threat posed by terrorism suggests weakness in this regard. Kellman recognizes, nevertheless, that no approach in a world of political realities, criminality and general uncertainties is perfect but argues that "...no other problem facing humanity is so potentially cataclysmic and has been so inadequately addressed". Not all believe the threat is so grave, but action is certainly needed to limit the proliferation of bioweapons and this book serves its purpose well by stimulating reflection about how to proceed in that direction. □

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